DOCUMENT RESUME

ED 087 791 TM 003 411

AUTHOR Levenson, Hanna
TITLE Reliability and Validity of the I,P, and C Scales - A Multidimensional View of Locus of Control.
PUB DATE Aug 73
NOTE 9p.; Paper presented at American Psychological Association Convention (Montreal, Canada, August, 1973)

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Activism; Behavior; *Behavior Rating Scales; Citizen Participation; Dissent; *Locus of Control; Parent Influence; Patients (Persons); Personality Studies; Personality Theories; Predictive Validity; Psychological Characteristics; Reinforcement; Social Behavior; *Test Reliability; *Test Validity
IDENTIFIERS Rotters Internal External (IE) Scale

ABSTRACT

The paper contains a discussion of the modification of Rotter's Internal External Scale into the three scales of Internal, Powerful Others, and Chance orientations. The tripartite, multidimensional view of locus of control was developed because the validity and usefulness of Rotter's lumping expectancies of fate, chance, and powerful others together under the rubric of external control were questioned. Data are provided indicating that the refinement of the Internal External scale is justified. The three predicted orientations emerged in factor analyses, and scores on the scales were differentially related to such variables as philosophy of human nature, involvement, information, activism, psychopathology, and perceived parental upbringing. (Author)

BEST COPY AVAILABLE

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED 080794
EM 003 111

Reliability and Validity of the I, P, and C Scales--A Multidimensional View of Locus of Control

Hanna Levenson

Texas A&M University

Abstract

The paper contains a discussion of the modification of Rotter's Internal-External Scale into the three scales of Internal, Powerful Others, and Chance orientations. The tripartite, multidimensional view of locus of control was developed because the validity and usefulness of Rotter's lumping expectancies of fate, chance, and powerful others together under the rubric of external control were questioned. Data are provided indicating that the refinement of the Internal-External scale is justified. The three predicted orientations emerged in factor analyses, and scores on the scales were differentially related to such variables as philosophy of human nature, involvement, information, activism, psychopathology, and perceived parental upbringing.

BEST COPY AVAILABLE

BEST COPY AVAILABLE

APA Convention, Montreal, August, 1973.
Symposium on "Beliefs in Locus of Control: Unidimensional or Multidimensional?"

Reliability and Validity of the I, P, and C Scales-- A Multidimensional View of Locus of Control

Hanna Levenson
Texas A&M University

The multidimensional view of locus of control I shall be talking about today stems from questioning the validity of Rotter's lumping expectancies of fate, chance, and powerful others together under the rubric of external control. It is my contention that separately measuring beliefs in internal, powerful others, and chance control might increase the usefulness of locus of control scales.

I, therefore, developed three new scales: Internal (I), Powerful Others (P), and Chance (C). The rationale behind differentiating two types of externals stemmed from the reasoning that people who believe the world is unordered would behave and think differently from people who believe the world is ordered but that powerful others are in control. In the latter case a potential for control exists. It is quite conceivable that a person believing in control by powerful others could perceive enough regularities in the actions of such people to obtain reinforcements through purposeful action. Such a view almost begins to sound like Rotter's conception of internality.

Furthermore, it was expected that a person who believes that chance is in control is cognitively and behaviorally different from one who feels that he himself is not in control. The data I will present today are relevant to the reliability and construct validity of separating Rotter's conceptually unidimensional I-E scale into the three dimensions of I, P, and C.

Description

Each of the Internal, Powerful Others, and Chance scales consists of eight items in a Likert format which are presented to the subject as a unified attitude scale of 24 items. The I scale measures the extent to which a person believes he has control over his own life (e.g., "When I make plans, I am almost certain to make them work"); the P scale deals with powerful others (e.g., "In order to have my plans work, I make sure that they fit in with the desires of people who have power over me"); and the C scale is concerned with perceptions of chance control (e.g., "It's not wise for me to plan too far ahead because many things turn out to be a matter of good or bad luck").

The items on the I, P, and C scales differ from Rotter's I-E scale in five important ways: (1) Instead of a forced-choice format, a Likert 6-point scale was used so that the three scales are statistically independent of one another. (2) On the I, P, and C scales a personal-ideological distinction has been made. All the statements are phrased so as to pertain only to the S himself. They measure the degree

to which an individual feels he has control over what happens to him, not what he feels is the case for "people in general." (3) No reference is made in the items which would assume the modifiability of the specific issues. These last two factors of personal versus ideological control and system modifiability were found by Gurin et al. (1969) to be contaminating factors in Rotter's I-E scale. (4) The I, P, and C scales have a high degree of parallelism in content among each triad. (5) Correlations between the new scales and Marlowe-Crowne's Social Desirability Scale were negligible and nonsignificant.

Reliability

Internal consistency estimates are only moderately high, but since the items sample from a variety of situations, this is to be expected. These correlations compare favorably with those obtained by Rotter (1966) for the I-E scale. For a student group Kuder-Richardson reliabilities are in the mid.60's and high.70's. Split-half reliabilities (Spearman-Brown) for an adult sample are all in the mid.60's. Student test-retest reliabilities for a one-week period are in the .60's and .70's.

Validity

Correlations with other scales

Rotter I-E scale. In a college sample (N=75) both the P and C scales are positively correlated with externality (r_s = .25, .56), and the I scale correlates negatively (r = -.41). These results add to the convergent validity of the new scales as both the P and C dimensions seem to be measuring some aspects of the external construct.

Relationships among the new scales. In various studies, the P and C scales are usually correlated significantly, but only slightly to moderately with each other (.23 to .59). The P and C scales are usually unrelated to the I scale. Such findings support the work of several investigators (e.g., Collins, 1973; Kleiber, Veldman & Manaker, 1973) who have found a lack of empirical bipolarity in the items paired on Rotter's I-E scale. That is, the items scored in an external direction are uncorrelated with items scored in an internal direction.

Philosphies of human nature. In order to demonstrate the convergent and divergent validity of the new scales, it was predicted that only the P scale would be significantly related to attitudes toward other people. Results of two studies have indicated that the more subjects felt they were controlled by powerful other people, the more they were inclined to perceive others as less altruistic and more untrustworthy as measured by Wrightsman's Philosophies of Human Nature Scale. Correlations with the I anc C scales were not significant.

Factor Analyses

Two factor analyses of the responses to the I, P, and C scales were computed: one using normal college males (N-329) and another using psychiatric inpatients (N=165). It was predicted that although the P and C scales contain externally worded statements, the items comprising each scale would form two distinct factors. In both studies responses to the 24 items were subjected to a principle component factor analysis.

For each of the samples, the first three factors to emerge were I, P, and C accounting for 60% of the total variance. Both analyses approach the ideal simple structure, since there is almost no overlap of the items on the factors and each I, P, and C factor remains conceptually pure in that only items from the appropriate scale load on that one factor.

The dimensions of internal control, powerful others, and chance seem to be consistent points of reference for both normal and abnormal samples.

Control and Involvement

While some researchers (e.g., Gore & Rotter, 1963, Strickland, 1965) found that social protest activities were positively related to Rotter's internal dimension, others (e.g., Gurin, et al. 1969, Ransford, 1968) found that those who were willing to participate in militancy scored the lowest in internal control. It was hypothesized that the dimensions of I and E were confounded--that a person could find the world predictable, even though he felt other people were in control. In this case, a potential for control would exist and people might become involved in instrumental social protest, even though they score in an external direction on Rotter's scale. It was hypothesized that while perceptions of control by powerful others would not keep people from becoming involved, perceptions of chance would.

A series of scales were administered to 96 adults (some of whom were members of an antipollution group) during an individual interview session. Included were the I, P, and C scales, an Involvement Activities Checklist, and a measure of knowledge about pollution. Results indicated that while the C scale had no relationship to involvement for females, males who believed that chance did not control their lives were involved in significantly more activities than those who perceived that chance had more control. No significant results relating the I and P scales to involvement were found. Similarly, male nonmembers scored significantly higher on the C scale than did male members. There were no significant differences between members and nonmembers on the I or the P scales.

It thus may be reasoned that expectations of control by powerful others or low expectations for control by self do not diminish involvement because the potentials for control still exist. For the high chance believer, however, there would be no such hope of control, and so high C scale scorers should be less involved.

Control and Information

The I-E control dimension was validated in part by how well it related to amounts of information in a hospital setting (Seeman & Evans, 1962); the more externally oriented the patients were, the lower they scored on an objective test about their illness. The rationale behind this finding was that people who were internally oriented would attempt to control their environment through knowledge.

A similar validation procedure was therefore used to see if Ss who believed that chance controlled their lives had significantly less amounts of information on matters of pollution than did the low C scorers. Using members of the antipollution group for analyses, males who believed that chance or fate controlled their lives had significantly less information ($\bar{X}$ = 62.00) than did those who felt that chance did not control their lives ($\bar{X}$ = 92.00). P and I scale scores, however, had no significant relationship to amounts of information.

Control and Student Activism

Several investigators have reported that the riots of the late 1960's and early 1970's were a blind reaction to forces over which students felt they had no control--an example of increased fatalism. I contend that this is a misinterpretation, and that the P scale might shed some light on student perceptions. A Master's Thesis done by Jim Miller at Texas A&M University examined the usefulness of the I, P, and C dimensions in understanding student activism and political ideology.

Mr. Miller administered Kerpelman's Political Activity Scale, a measure of Conservatism-Liberalism, and the I, P, and C scales to 99 undergraduate students at several, large, state universities in the Southwest. He was fortunate enough to obtain in his sample most of the primary student leaders of conservative and liberal causes. In 2X2 analyses of variance, the I, P, and C scale scores of activists and nonactivists of both liberal and conservative political ideologies were examined.

Findings indicated that the I scale scores were unrelated to ideology or to activism. This result supports the findings of several researchers (e.g., Abramowitz, 1973; Gurin et al., 1969; Mirels, 1970) who concluded that personal control was not related to activism. The significant findings with the C scale indicate that conservatives believed less in control by chance forces than liberals. In fact, the conservatives' C scale scores were extremely low, indicating that they perceived everything as quite predictable.

With relevance to the predicted perceptions of powerful others, there was a significant interaction between Ideology and Activism for the P scale scores. Liberal activists had significantly higher perceptions of powerful others than conservative activists, and conservative nonactivists had significantly higher P scale scores than conservative activists. One might speculate that conservative students are discouraged from activism if they have a high perception of powerful others, while such perceptions might encourage the activism of liberals, who are by definition against the status quo.

Control and Psychopathology

Results from previous studies relating scores on Rotter's I-E scale to adjustment or progress in therapy have been conflicting or unclear. Some investigators (e.g., Cromwell, Rosenthal, Shakow, & Zahn, 1961; Shybut, 1968) found that psychiatric patients scored higher on the external dimension than did nonpsychiatric samples. Others (e.g., Harrow & Ferrante, 1969), however, found that inpatients' I-E scores were not significantly different from those of normals.

The purpose of this research, which began almost two years ago, was to use the I, P, and C scales in order to measure more accurately expectancies of control as they relate to adjustment and clinical improvement.

Clinical diagnoses. At monthly intervals, 165 functionally psychotic and neurotic inpatients were administered the I, P, and C scales. Initial testing within five days of hospitalization indicated that patients perceived significantly more control by powerful others and chance forces than an adult normal sample (ps< .001). As expected, neurotic patients' scores are much closer to those of the normal sample than those of the psychotics. The depressives, usually those with less difficult types of adjustment problems than the schizophrenics, scored between the neurotics and the schizophrenics on the P and C scales.

While the paranoid Ss scored higher on the P scale than any other sub-group, contrary to what one might expect, this difference does not approach significance. For patients who were in the hospital 60 days or more, however, paranoids scored significantly higher on the P scale than undifferentiated types on all monthly tests. Patients who were committed to the hospital believed more than voluntary patients that powerful others controlled their lives (p<.03).

Change over time. It was expected that hospitalized patients receiving therapy would be learning how to deal successfully with their environment and therefore should increase in their perceived mastery with time. Readministering the I, P, and C scales at monthly intervals was proposed to reflect any such changes in perceived locus of control.

Patients (N=87) who took the first retest had significantly higher I scale scores one month later. There were no significant differences in P or C scale scores. This finding suggests that it is the internal dimension which is most open to change while powerful others or chance control are more impermeable.

At the time of discharge, patients' scores on the P and C scales were still rather high. It may be that the patients who remained in the hospital long enough to be retested were less susceptible to change on these measures, or that high perceptions of control by powerful others or chance were maintained as a function of prolonged length of institutionalization.

Parental Antecedents

It was reasoned that if the separation of locus of control into the three orientations of Internality, Powerful Others and Chance is meaningful, then one can expect each of these orientations to be fostered by a somewhat different set of parental behaviors. The following study was done in an effort to examine further the relationship between home environment and generalized expectancies for control and thereby help to provide additional evidence supporting the construct validity of the new Internal, Powerful Others, and Chance scales.

The I, P, and C scales and the Perceived Parenting Questionnaire were administered to 276 undergraduates. The Perceived Parenting Questionnaire contains 21 items considered to measure nine general child-rearing behaviors such as nurturance and achievement pressure.

Analyses of variance indicated that, as expected, parental behaviors associated with internality were perceived differentially depending upon the sex of the child. In keeping with past findings (Davis & Phares, 1969; Katkovsky, Crandall, & Good, 1967; MacDonald, 1971; Reimanis, 1971), males who were helped and taught by their mothers had higher Internal scale scores. However, there was no such finding for females. In fact, girls who perceived that their mothers did not worry about them had significantly higher internal scores than those who thought their mothers were protective. These results tend to support those of Reimanis (1971), who reasoned that where the home environment is somewhat rejectant, the daughter may be forced to be more independent (internal) to satisfy her needs.

Parental demanding, punishing, and controlling behaviors were all positively related to scores on the Powerful Others scale. As expected, subjects who had problems in figuring out what to expect from their parents had significantly more perceptions of the world as unordered-as controlled by fate or chance.

In this study, the empirical evidence supporting the theoretical separation of externality into the two dimensions of powerful others and chance control comes from the main differentiating patterns of parental behaviors which are associated with each of the orientations--punishing and controlling behaviors for the Powerful Others scale, and inconsistent and depriving behaviors for the Chance scale.

Conclusion

It appears that the refinement of the I-E scale into the three dimensions of internal, powerful others, and chance control is justified by the present data. The three predicted orientations emerged in factor analyses, and scores on the scales were differentially related to such variables as philosophy of human nature, involvement, information, activism, psychopathology, and perceived parental upbringing.

References

Abramowitz, S. I. Internal-external control and social-political activism: A test of the dimensionality of Rotter's Internal-External scale. Journal of Consulting and Clinical Psychology, 1973, 40, 196-201.

Collins, B. E. Four separate components of the Rotter I-E scale: Belief in a difficult world, a just world, a predictable world and a politically responsive world. Journal of Personality and Social Psychology, 1973, in press.

Cromwell, R. L., Rosenthal, D., Shakow, D. & Zahn, T. P. Reaction time, locus of control, choice behavior, and descriptions of parental behavior in schizophrenic and normal subjects. Journal of Personality, 1961, 29, 363-379.

Davis, W. L. & Phares, E. J. Parental antecedents of internal-external control of reinforcement. Psychological Reports, 1969, 24, 427-436.

Gore, P.M., & Rotter, J. B. A personality correlate of social action. Journal of Personality, 1963, 31, 58-64.

Gurin, P., Gurin, G., Lao, R., & Beattie, M. Internal-external control in the motivational dynamics of Negro youth. Journal of Social Issues, 1969, 25, (3), 29-53.

Harrow, M. & Ferrante, A. Locus of control in psychiatric patients. Journal of Consulting and Clinical Psychology, 1969, 33, 582-589.

Katkovsky, W., Crandall, V. C., & Good, S. Parental antecedents of children's beliefs in internal-external control of reinforcements in intellectual achievement situations. Child Development, 1967, 38, 766-776.

Kleiber, D., Veldman, D. J., & Menaker, S. L. The multidimensionality of locus of control. Unpublished Manuscript. University of Texas at Austin, Austin, Texas, 1973.

Levenson, H. Distinctions within the concept of internal-external control: Development of a new scale. Proceedings of the American Psychological Association, 1972, 259-260.

Levenson, H. Multidimensional locus of control in psychiatric patients. Journal of Consulting and Clinical Psychology, 1973, 41, in press.

Levenson, H. Perceived parental antecedents of internal, powerful others, and chance locus of control orientations. Developmental Psychology, 1973, 9, in press.

Levenson, H. Activism and powerful others: Distinctions within the concept of internal-external control. Journal of Personality Assessment, 1974, 38, in press.

MacDonald, A. P. Internal-external locus of control: Parental antecedents. Journal of Consulting and Clinical Psychology, 1971, 37, 141-147.

Mirels, H. L. Dimensions of internal versus external control. Journal of Consulting and Clinical Psychology, 1970, 34, 226-228.

Ransford, H. K. Isolation, powerlessness, and violence: A study of attitudes and participation in the Watts riot. American Journal of Sociology, 1968, 73, 581-591.

Reimanis, G. Effects of experimental IE modification techniques and home environmental variables on IE. Paper presented at the American Psychological Association, September, 1971.

Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80, No. 1 (Whole No. 609).

Seeman, M., & Evans, J. Alienation and learning in a hospital setting. American Sociological Review, 1962, 27, 772-782.

Shybut, J. Time perspective, internal vs. external control and severity of psychological disturbance. Journal of Clinical Psychology, 1968, 24, 312-315.

Strickland, B. R. The prediction of social action from a dimension of internal-external control. Journal of Social Psychology, 1965, 66, 1965, 66, 353-358.